

Claims:

1. A moving device comprising:
5 object detecting means for detecting a contact of an object,
a moving body on which the object detecting means is provided,
driving means for driving the moving body and control means for controlling the
driving means,
wherein the control means stops the movement of the moving body or controls the
10 driving means in such a manner as to reverse the moving direction of the moving body
when the object detecting means detects a contact of an object or detects a removal of the
object that has been in contact.
2. A moving device as set forth in Claim 1, wherein the object detecting
15 means comprises a flexible piezoelectric sensor and a detecting portion for detecting a
contact or removal of an object based on an output signal of the piezoelectric sensor.
3. A moving device as set forth in Claim 2, wherein the detecting portion
determines that either a contact or removal of an object occurs when the amplitude of an
20 output signal of the piezoelectric sensor overpasses a set range which is set in advance.
4. A moving device as set forth in any of Claims 1 to 3, wherein the moving
body is at least one of such openable and closable doors as automotive sliding door,
tailgate, trunk lid, window of a type that can ascend and descend and sunroof, openable
25 and closable wings on a cargo deck of a truck, and doors and shutters of elevators and
buildings.
5. A moving device as set forth in any of Claims 1 to 3, wherein the moving
body is a running vehicle having a bumper, and wherein the object detecting means is
30 provided on the bumper.
6. A moving device as set forth in any of Claims 1 to 5, wherein information

means is provided which informs that the driving means is to stop the movement of the moving body or reverse the moving direction of the moving body, when the object detecting means detects a contact or removal of an object.

5 7. A moving body opening and closing control system comprising:
a moving body that is constructed to be opened and closed freely,
a sensor that is attached to the moving body for detecting vibrations generated by
a contact of an object or catching of an object and
a control unit for controlling opening and closing operations of the moving body
10 based on an output signal from the sensor,
wherein the control unit starts an energization to the sensor at least with an
opening operation of the moving body, and
wherein when a contact of an object is detected by the sensor during a closing
operation, the closing operation of the moving body is stopped or the moving body is
15 opened

8. A moving body opening and closing control system as set forth in Claim
7, wherein a piezoelectric sensor which is flexible and which takes the form of a cable is
used as the sensor.

20

9. A moving body opening and closing control system as set forth in Claim
7, wherein when the sensor detects vibrations or catching in the middle of an opening
operation of the moving body, the movement of the moving body is stopped or the moving
body is closed.

25

10. A moving body opening and closing control system as set forth in Claim
7, wherein the energization to the sensor is continued while the moving body is in an
opened state.

30 11. A moving body opening and closing control system comprising a moving
body that is constructed to be opened and closed freely, a sensor that is attached at a fixing
portion that is opposite to the moving body for detecting a catching caused by the moving

body and a control unit for controlling the moving body and the sensor, wherein the control unit starts an energization to the sensor at least with an opening operation of the moving body.

5 12. A moving body opening and closing control system as set forth in Claim 11, wherein a piezoelectric sensor which is flexible and which takes the form of a cable is used as the sensor.

10 13. A moving body opening and closing control system as set forth in Claim 11, wherein the energization to the sensor is continued while the moving body is in an opened state.

15 14. A moving body opening and closing control system comprising:
a moving body that is constructed to be opened and closed freely,
a sensor that is attached to the moving body for detecting vibrations generated by
a contact of an object or catching of an object and
a control unit for controlling the moving body and the sensor,
wherein the control unit has a function to detect an instantaneous disconnection of
a power supply, discontinues the movement of the moving body or reduces the speed
20 thereof when the instantaneous disconnection of the power supply is detected and causes
the moving body to normally operate after the power supply is restored and a
predetermined time has been counted since then.